

MEETING MINUTES
LIGNITE RESEARCH COUNCIL
July 24, 1997
Doublewood Inn, Bismarck, ND

MEMBERS (or their authorized alternates) PRESENT:

John Bluemle	North Dakota Geological Survey
John Dwyer	Lignite Energy Council
Rich Fockler	Basin Electric Power Cooperative
Mick Grosz	North Dakota State Legislature
Bruce Hagen	North Dakota Public Service Commission
Ron Haugen	North Dakota Farmers Union
Terry Hildestad	Knife River Corporation
Kent Janssen	Dakota Gasification Company
Marlowe Johnson	Otter Tail Power Company
Mike Jones	Energy and Environmental Research Center
Doug Kane	MDU Resources Group, Inc.
August Keller	The North American Coal Corporation
Ron Larson	Cooperative Power
Gary L. Nelson	North Dakota Building & Construction Trades Council
Harvey Ness	U.S. DOE - Federal Energy Technology Center
Jeff Reinke	Dakota Resource Council
Martin Schock	North Dakota Department of Health
David Sogard	Minnkota Power Cooperative – BNI Coal, Ltd.
Gordon Westerlind	United Power Association

OTHERS PRESENT:

Lyndon Anderson	Lignite Energy Council
Steven Benson	Energy and Environmental Research Center
Jim Deutsch	North Dakota Public Service Commission
Karlene Fine	Industrial Commission of North Dakota
Mark Foss	Dakota Gasification Company
Vicki Gilmore	Lignite Energy Council
Jan Hulla	University of North Dakota School of Medicine
Mark Kurz	Energy and Environmental Research Center
Clifford R. Porter	Lignite Research Council
Andy Stewart	Cooperative Power
Paul Sukut	Dakota Gasification Company
John Weeda	Cooperative Power
Lyle Witham	North Dakota Attorney General's Office

Lignite Research Council Chairman John Dwyer called the Lignite Research Council (LRC) meeting to order on July 24, 1997, at Doublewood Inn, Bismarck, North Dakota. The first hour of the LRC meeting was a working luncheon held jointly with members of the Lignite Energy Council Board of Directors.

Clifford Porter discussed goals and objectives of the Lignite Energy Council (LEC) and what they mean to both the LEC and the LRC. He said the LEC has established a primary objective for involvement in research and development (R & D) activities, to promote the industry and develop R & D and demonstration activities. There are specific objectives in terms of projects to promote the efficient and clean use of lignite, and also to support lignite marketing activities and existing and potential demonstration projects.

Financial Summary by Clifford R. Porter

For the 1995-1997 biennium, 33 projects received funds. The total amount spent on those 33 projects was \$7,986,388. Administration during the biennium was \$607,971. There were six marketing studies; two are still active. \$370,281 has been spent for marketing studies. Porter said there is one demonstration project: Great Plains diversification. There were 26 small projects with funding of \$1,217,185. Total funding budgeted for the biennium was a little over \$15 million. We have spent \$7,986,388, and there is a balance of \$7,394,000, which is carried over to the 1997-1999 biennium.

The six marketing studies during the biennium included two Regional Lignite Energy Marketing Plan studies (one with Simmons Advertising and one with both Simmons and Himle Horner). There were two studies dealing with mercury and human health (one with ENSR Consulting and one with Roth and Associates). One study was initiated with Simmons Advertising to develop a mercury facts brochure. Porter said an agreement has just been entered into with Chemical Market Resources of Texas to look at specific markets for phenols and intermediates for phenols.

Porter summarized the targeted and actual funding for the small research projects.

Recipients of the \$1,217,185 in 1995-1997 small projects funds included Energy and Environmental Research Center, Lignite Energy Council, North Dakota State University, Microbeam Technologies, Grand Forks Activation Technologies, Dakota Gasification Company, the Cyclone Users Group, Tri-States, and MDU. There were 15 projects approved during the 1995 to 1997 biennium and 11 projects approved in previous bienniums.

Porter is evaluating joint program opportunities with the Energy and Environmental Research Center, Electric Power Research Institute and the Department of Energy.

For the next biennium (July 1, 1997- June 30, 1999) the estimated total funding for all program areas is \$14,011,645. This breaks down to \$400,000 for administration, \$400,000 for marketing studies, \$11,493,926 for demonstration projects, and \$1,700,000 in the small research projects, Porter said.

Funding for the administration and marketing studies areas for the 1997-1999 biennium is \$400,000 each. Obligation to pay the lignite research bonds is \$2,140,124 in the biennium. \$250,000 is designated for joint programs. In the demonstration area, \$9,103,802 is available for new projects.

Update on DGC's Great Plains Synfuels Plant diversification

Kent Janssen gave an update on Dakota Gasification Company's Great Plains Synfuels Plant, the anhydrous ammonia/ammonium sulfate projects and the carbon dioxide project.

Janssen said DGC receives market-based pricing for its natural gas, plus settlement payments of \$29,000,000 per year for the next 4½ years, then \$17,000,000 for an additional two years. Of these payments \$4.5 million is for DOE. DGC's diversification goal is to position the plant for economic survival 4½ years from now.

Byproduct revenues for the Great Plains Synfuels Plant include: ammonia (\$129 million); ammonium sulfate (\$105 million); and phenol, cresols, naphtha and krypton/xenon (\$40 million). DGC has invested \$274,000,000 in capital for diversification since purchasing the plant. The anhydrous ammonia plant is currently producing 1,000 tons per day. There is a huge demand for the anhydrous ammonia. The anhydrous ammonia project has created 81 new jobs. The lignite research, development and marketing program has provided \$12.3 million in demonstration project funds for the anhydrous ammonia project. DGC is obligated to repay a minimum of \$4.2 million with a maximum repayment amount of \$7.5 million.

In the next 5 years the plant will do well to break even, Janssen said. Beyond 5 years it is doubtful the plant would operate without additional diversification such as the carbon dioxide project.

Janssen briefly explained the PanCanadian agreement for the carbon dioxide project. DGC will put in a compressor station at the Great Plains Synfuels Plant and a 200-mile pipeline to Weyburn, Saskatchewan. This will be a 15-year contract with PanCanadian, with initial delivery in the fall of 1999. It will provide an electrical load of 30 MW to Basin Electric Power Cooperative. For volume obligations PanCanadian will be required to take not less than 75 MMSCF/day and the Synfuels Plant will supply not less than 95 MMSCF/day, which is approximately 40% of the available carbon dioxide. There will be a demand payment of \$1,750,000/month and a variable charge of 47 cents/MSCF that escalates 2% per year in the year 2000 for the life of the contract. As an example, \$36 million in annual revenue will be generated in the year 2000 based on selling 85 MMSCF/day. Thus, over the 15-year life of the project, total revenue would be over \$567 million, Janssen said.

Future Grant Round

Porter said October 1, 1997 is the next grant application deadline.

The LRC will meet jointly with the LEC Board of Directors at the Doublewood Inn, Bismarck, on December 4, 1997.

On August 21, 1997, the Industrial Commission is scheduled to consider the LRC recommendations from the July 24, 1997 LRC meeting.

Joint LRC/LEC Board of Directors Meeting Adjourns; LRC Meeting Begins

The jointly held luncheon meeting of the Lignite Research Council and the Lignite Energy Council Board of Directors adjourned, and the LRC meeting began in the Doublewood Inn's Judicial Room.

Approval of Minutes

Dwyer asked for a motion to approve the minutes of the last LRC meeting, held March 20, 1997 at Doublewood Inn, Bismarck. Bruce Hagen made a motion to approve the minutes. Seconded by Doug Kane; motion carried.

Grant Round XXVIII Grant Applications

Porter summarized Technical Peer Reviewers' comments and gave his Technical Advisor Recommendations for the four Grant Round XXVIII project applications, as follows:

LRC-XXVIII-A: "Evaluation of Market Potential for North Dakota Flue Gas Desulfurization Gypsum"; Submitted by EN-ROCK, Incorporated; Principal Investigator: Mark Flaagen; Funding Request for: \$23,500; Total Project Cost: \$47,000

Porter said the objective of the project is to evaluate and develop markets for gypsum. The project duration is approximately 18 months and the goals are to assess the potential markets for gypsum, determine quality specifications and develop the most favorable economic market. The technical peer reviewers gave the project an average weighted score of 143.3 out of a possible 250 points. As technical advisor, Porter recommended the LRC vote to recommend to the Industrial Commission that the project be funded. The LRC members who have a potential conflict of interest include Cooperative Power Association, United Power Association and Energy & Environmental Research Center.

Andy Stewart of Cooperative Power Association spoke on behalf of the project. Stewart said Cooperative Power would not have any problem with the funding contingencies associated with this project. John Weeda, speaking in support of the project, said utilization of byproducts is good for the lignite industry and Cooperative Power.

LRC-XXVIII-B: "Absorption of Mercury after Human Consumption of Northern Plains Regional Game Fish and the Associated Health Risks"; Submitted by University of North Dakota School

of Medicine; Principal Investigator: Janis E. Hulla, Ph.D.; Funding Request for: \$134,838; Total Project Costs: \$389,668

Porter said the project's objective is to evaluate human health effects associated with the consumption of regional game fish. The project duration will be three years. Volunteers will be provided fish and non-fish diets. The fish will be obtained from Devils Lake. Mercury intake and elimination of the volunteers will be monitored to determine mercury absorption and half-life of mercury elimination. Average weighted score from the technical peer reviewers was 161.3 out of 250 points. All three technical reviewers recommended Funding To Be Considered.

Porter said he also sent the proposal to the North Dakota Department of Health to get their input concerning the grant proposal, and to request their funding support for the project.

Porter recommended the LRC vote to fund the project. This project and the companion proposal LRC-XXVIII-C are crucial to developing a scientific basis for future mercury regulations.

There are no potential conflict-of-interest parties among the LRC members.

Janis Hulla, the project's principal investigator, presented information in support of the proposal, highlighting health risks associated with the environment, toxicology and how the project will measure the levels of mercury in Devils Lake fish. Mick Grosz asked how air and ground emissions would apply to this study. Porter said that this study ties in with LRC-XXVIII-C, which does address those types of mercury emissions. Dwyer said that a mercury value proposed during the Minnesota externalities proceedings could significantly impact the competitive position of the lignite industry. In addition, a proposed coal technology study (which is not yet at the point of mercury regulations) is under way for Congress. It would impact the lignite industry at an estimated \$75 million annually, which would affect lignite's competitive position.

LRC-XXVIII-C: "Mercury Formation and Fate"; Submitted by Energy & Environmental Research Center; Project Manager: Dr. Steven A. Benson; Principal Investigators: Dennis Laudal (for Task 1); James Sorensen and Marc Kurz (for Task 2); Funding Request for: \$120,000; Total Project Costs: \$400,000

Porter said the objectives of the proposal are to determine the abundance and forms of mercury in flue gases emitted from lignite-fired power plants and to determine data on mercury in regional lakes. Project duration is 14 months. The technical reviewers gave the proposal an average weighted score of 168.7 out of 250 points. One of the technical peer reviewers recommended Do Not Fund, one recommended Funding To Be Considered, and one recommended Fund for Task 1, but Funding To Be Considered for Task 2. Porter's recommendation: Fund. The conflict-of-interest party is Energy & Environmental Research Center (EERC).

Steven A. Benson from EERC commented on the proposal. Benson said Task 2 would address sources of mercury and what type of mercury is in regional lakes. Mark Kurz, a geologist at EERC and a principal investigator for Task 2, was also present at the meeting to answer questions about the project.

Motion to Close Meeting for Confidential Session

Dwyer asked for a motion to close the Lignite Research Council meeting so that only voting LRC members and/or their voting alternates would be present during discussion about confidential proposal LRC-XXVIII-D. August Keller made the motion to close the meeting and Doug Kane seconded it. Motion carried. Non-LRC members then left the room while comments and discussion about the following confidential proposal were tape recorded, per the North Dakota Century Code.

LRC-XXVIII-D: CONFIDENTIAL - "An Application for Funding Assistance for the Capture, Compression and Transportation of Carbon Dioxide Derived from the Gasification of North

Dakota Lignite for Enhanced Oil Recovery”; Submitted by Dakota Gasification Company; Principal Investigator: Wayne L. Rickerd; Funding Request for: \$6,000,000; Total Project Costs: \$107,000,000

Porter's recommendation as technical advisor was that funding not to exceed \$6,000,000 be provided for the capture and compression of carbon dioxide by the Dakota Gasification Company at its facility near Beulah, and the transportation of this carbon dioxide to the Weyburn Unit in Canada for enhanced oil recovery (the “Beulah Sequestration Project”) from the Lignite Research Fund, with contingencies and subject to appropriate legal counsel review. The contingencies are listed on pages VI-D-1 and VI-D-2 of the July 24, 1997 LRC meeting book. All three independent technical peer reviewers recommended “Funding To Be Considered”. The average weighted score from the three reviewers was 182 out of a possible 250 points. Potential conflict-of-interest parties for this proposal are Dakota Gasification Company, Basin Electric Power Cooperative and The North American Coal Corporation.

Motion to Reopen LRC Meeting after Confidential Session

Dwyer asked for a motion to reopen the LRC meeting after the confidential proposal for LRC-XXVIII-D was discussed. Doug Kane so moved; seconded by Mike Jones. Those who had exited prior to the confidential session returned to the meeting for the remainder of the LRC meeting.

Open Records and Meetings

Dwyer said that he and Karlene Fine were among attendees at a recent meeting sponsored by the North Dakota Attorney General's Office concerning open records and meetings. This fall, an open records and meetings manual written by the Attorney General's office is to be made available to the public.

Externalities Proceedings Before the Minnesota Public Utilities Commission

Dwyer asked Lyle Witham from the North Dakota Attorney General's Office to give an update on the externalities proceedings - the March 27, 1997 hearings on the petitions for reconsideration before the Minnesota Public Utilities Commission (MPUC). Witham said the MPUC moved their application of the carbon dioxide values from 200 miles outside the border of Minnesota to the actual Minnesota border.

Other Matters

Witham said that EPA is looking at changing some regulations. They are looking at different numbers for mercury and carbon dioxide regulations, and those are issues the lignite industry is going have to deal with whether or not the grant application proposals discussed at this LRC meeting are approved. He said those issues are not going to go away.

Harvey Ness from the Federal Energy Technology Center (FECT) at Morgantown, West Virginia, said the Department of Energy consolidation is going well. He also mentioned there is a great deal of interest at DOE and at DOE-sponsored conferences concerning carbon dioxide.

Confidential Balloting for Grant Round XXVIII Proposals

The LRC cast confidential ballots to either recommend or deny funding of the Grant Round XXVIII proposals. Balloting results are to be presented to the Industrial Commission for consideration when it reviews these proposals on August 21, 1997. The LRC votes were as follows:

LRC-XXVIII-A: 17 - Fund; 1 - Do Not Fund; 1 - Abstained from voting

LRC-XXVIII-B: 12 - Fund; 6 - Do No Fund; 1 – Abstained from voting

LRC-XXVIII-C: 15 - Fund; 3 - Do Not Fund; 1 – Fund Task 1 only

LRC-XXVIII-D: 15 - Fund; 4 - Do Not Fund

Those recommendations will be presented by Dwyer and Porter to the Industrial Commission members on August 21, 1997.

Adjournment

Dwyer requested that anyone who still has a copy of the confidential proposal for LRC-XXVIII-D return it to Karlene Fine before leaving.

Prior to adjournment Dwyer said the next LRC meeting is scheduled for December 4, 1997. There being no further business before the LRC, the meeting adjourned.

Vicki Gilmore, Recording Secretary